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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/945,009	08/30/2001	Ki-Deak Lee	2008-3-13	1616

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EXAMINER

STREGE, JOHN B

ART UNIT PAPER NUMBER

2625

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/945,009

Applicant(s)

LEE, KI-DEAK

Examiner

John B Strege

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are:

Page 7 lines 13-15 disclose that "based on the segments of the first image strip S1 of all the image strips, the optimum overlap region in the segment region of the next image strip S2 is detected in ST-240". It is not clear how all of the image strips can contain the first image strip S1. Examiner assumes that based on the segments of the first image strip, the optimum overlap region in the segment region of the next image strip S2 is detected.

Page 6 lines 6-15 uses both the words "image strips" and "image segments" in an apparently interchangeable manner. For example line 7 discloses that "image strips are captured so that they can be combined", and then line 9 discloses that "each image segment is combined." Later in the specification a difference is distinguished between strips and segments, specifically stating that the strips are divided into segments (page 7 line 10). Thus the specification is unclear regarding the exact use of each term. Examiner suggests changing the word "segment" on line 9 to "strip" thus clarifying that they are separate entities.

The word "squire" is repeated several times throughout the specification (for example page 7 line 20, page 8 line 5). Examiner assumes that this is meant to be "square".

Appropriate correction is required for all of these matters.

Examiner's Comment

2. The specification refers several times to a constant time and speed. Here it is noted that while speed may vary, time is generally always constant (unless dealing with relativity). It is assumed that the time referred to in the invention is a time interval. If this is the case, proper changes to the claims and specification is suggested.

Claim Objections

3. Claims 1 and 2 are objected to because of the following informalities: The words "as a" on line 6 of claim 1 should be replaced with "into". The word into should be added on line 2 of claim 2 to read "is divided into a". Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for capturing a fingerprint image (or strip) sequentially according to a constant speed (page 5 line 25 – page 6 line 1), does not

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reasonably provide enablement for dividing the strip at a constant speed. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

Examiner suggests amending claim 1 lines 4-5 to read "capturing a fingerprint image sequentially through the fingerprint detecting sensor according to a constant speed", and deleting "according to a constant time and speed" from lines 6-7. Examiner will interpret claim 1 both according to this and according to the original wording. Please note that based on the 112 2nd paragraph rejection discussed below, a further clarification suggested by the Examiner would be to amend lines 4-7 as follows "capturing a fingerprint image sequentially through the fingerprint detecting sensor according to a constant speed to produce image strips; dividing each strip into predetermined segments."

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

Claim 1 recites the limitation "each image strip" in line 8. There is insufficient antecedent basis for this limitation in the claim. For examination purposes the Examiner will assume that capturing a fingerprint image sequentially through the fingerprint detecting sensor produces image strips and that these strips are divided into predetermined segments.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, and 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mainguet USPN 6,289,114 in view of Martinez et al. USPN 6,483,932 (hereinafter "Martinez").

Mainguet discloses a means for reading a fingerprint and a means to reconstitute an image of the fingerprint from partial images obtained during motion (col. 2 lines 59-62). It is disclosed that the fingerprint sensor 10 (figures 1 and 2) can comprise only one row of sensitive elements (thus a linear sensor) and carry out a relative shift of the finger in a direction substantially perpendicular to the row of sensitive elements (col. 4

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lines 62-66). In this case in order to reconstitute the image without distortion one way would be to lay down the relative speed of shift of the sensor with respect to the finger (col. 5 lines 4-7)(thus providing for capturing a fingerprint image sequentially through the fingerprint detecting sensor at a constant speed). As can be seen in figure 5, the image frames (or strips) I_0, I_1, \dots, I_n are taken at a constant time interval and have overlapping regions. These strips are processed with an algorithm to determine the optimum position of overlap between the frames (col. 8 lines 10-23). A weighting between the successive frames in their optimum overlapping position is found to make a resultant image and this is continued to make a complete image of the fingerprint by combining the frames (col. 8 lines 52-67).

Because of the wording of claim 1 it can be interpreted that "dividing scanned fingerprint image into predetermined segments according to constant time and speed" is disclosed by Mainguet. The scanned fingerprint image can be read as the entire fingerprint formed by the frames (divisions) that are taken (or thus divide the entire image) at constant time intervals and speed.

Mainguet does not explicitly disclose dividing the captured frames into segments (note that this is the suggested amendment of the Examiner, not the claimed matter).

Martinez discloses a method of capturing and combining multiple fingerprint images to generate an overall fingerprint image (col. 1 lines 8-11). A plurality of fingerprint frames are captured (col. 7 lines 44-45). Then a centroid window of each of the plurality of captured fingerprint image frames is determined thus dividing the frame (col. 7 lines 45-48 and col. 11 lines 38-50). The motivation of doing this is that by

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focusing only on the relevant portion of the captured frame, the processing of the captured frame can proceed much faster (col. 11 lines 48-50).

Mainguet and Martinez are analogous art because they are from the same field of endeavor of combining multiple fingerprint images.

At the time of the invention it would be obvious to one of ordinary skill in the art to divide the frames of Mainguet into segments as does Martinez with the motivation being to process the captured frames faster. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Mainguet and Martinez to obtain the invention as specified in claim 1.

Regarding claims 3-4, as discussed Mainguet compares the corresponding segments and replaces them with a weighting which would include horizontal or vertical variation.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Brownlee USPN 6,324,310 Method and Apparatus for scanning a Fingerprint using a Linear Sensor.

Fishbine et al. USPN 4,933,976 System for Generating Rolled Fingerprint Images.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B Strege whose telephone number is (703) 305-8679. The examiner can normally be reached on Monday-Friday between the hours of 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JS



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